

MARINE RECREATIONAL INFORMATION PROGRAM

FY 2015 Project Plan

Test the new sampling design for the onsite intercept survey of private boats in HMRFS

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Operations Team

1. Overview

1.1. Background

A MRIP project was funded in 2012 to review current Hawaii Marine Recreational Fishing Survey (HMRFS) methodologies and evaluate alternative improvement options. Preliminary assessments were provided for charter boat, private boat, and shore fishing modes (Breidt et al. 2012). It was recommended that survey design improvements should focus on the private boat and shore modes since the charter boat mode is covered by the State's commercial reporting system. For the shore mode, onsite roving surveys (for catch and effort) in combination with a mail survey and an aerial survey have been designed and are currently being tested by FY13 and FY14 MRIP projects (Ma et al. 2014, Ogawa and Ma 2014).

As a first step to improve data from the private boat mode, a pilot mail survey of registered boaters was conducted in 2013 (Pacific Islands Regional Office, 2014). The survey, which had a response rate of ~40%, inquired whether the respondent used his boat for recreational fishing and asked those who have engaged in boat fishing in Hawaii a number of questions about their fishing activities. When asked, most respondents indicated that they would prefer a mail survey versus telephone, internet, and in-person methods. The State recently revised its vessel registration forms to obtain information about which boats are used for non-commercial fishing activities and the Hawaii vessel registry can now be used as an efficient sampling frame for a private boat mail survey for fishing effort. However, there is some question as to whether an onsite intercept survey may be more suitable than a mail survey for private boat catch in Hawaii.

Non-commercial fishermen fishing in Hawaii state waters are generally not required to have a permit or report their fishing trips. Because fishermen may not remember all the catch from their fishing trips when they are surveyed via mail or telephone several days or weeks after their trip(s), or may misidentify fish species, onsite intercept surveys may be beneficial. Such surveys are used to estimate recreational catch rate in the Atlantic and Gulf states that are covered by the Marine Recreational Fisheries Statistics Survey (MRFSS) and MRIP. To address the NRC concerns about the data collection protocols and temporal coverage of sampling in MRFSS (NRC, 2006), the MRIP Design and Analysis Workgroup (2012) developed a new sampling design for the intercept survey. The new design has been implemented in the mainland U.S. since 2013. In the new design, surveyors are assigned to a survey site at a predetermined schedule (with fixed start time and duration). Surveyors are not allowed to conduct interviews just at peak fishing times or move to alternate sites to enhance the number of interviews, which was practiced under MRFSS. This change eliminates a potential bias when mean catch rates differ between peak and off-peak periods of fishing activity (MRIP Design and Analysis Workgroup, 2012). In the new design, low activity sites are clustered to form two- or three-site clusters and surveyors can move to fishing access sites in a predefined site cluster. Clustering of lower fishing activity sites into multi-site units increases the inclusion probabilities of these lower activity sites relative to the higher activity sites in the sampling design thereby resulting in a more even spread of samples among all sites.

The new design currently used in Atlantic and Gulf States can be modified for use by the HMRFS. The modifications may account for 1) different units used for the fishing effort survey, 2) different cluster methods for fishing access sites, and 3) different survey schedules. If the state vessel registry is used as a sampling frame for a private boat fishing effort survey in Hawaii, fishing effort may be measured as vessel trips rather than angler trips and the corresponding catch rate would be evaluated as catch per vessel trip. The survey schedules can also be different from the six-hour blocks (8:00 AM to 8:00 PM) currently used in the Atlantic and Gulf States, depending on possible different site clustering criteria (J. Foster, pers. Comm.). Based on the existing new design for onsite surveys in Atlantic and Gulf States, we propose to design an appropriate onsite survey to estimate catch rate from private boat fishing in Hawaii and test the feasibility.

1.2. Project Description

The project team will consist of Hawaii members (NMFS, Hawaii Division of Aquatic Resources, Western Pacific Regional Fishery Management Council), staff members from NMFS Office of Science and Technology, and MRIP statistical consultants. It is anticipated that a workshop may be needed to bring the project team members and the HMRFS surveyors together to discuss the design for the onsite intercept survey. The workshop can be expanded to discuss results from other HMRFS related projects and include other participants.

The data collected by HMRFS will be examined. The historic HMRFS data from 2003-2010 were reviewed in a previous MRIP project (Ma et al., 2011). As part of that project, a site register file was created/updated to contain current site information and fishing pressures. The updated sample draw program is more efficient at providing island-based samples and it uses an improved weighting scheme for site-sample selection. The HMRFS data collected since then (2011-now) can be reviewed to identify possible patterns in the data, which may help design the onsite intercept survey.

It is likely that the whole new design framework will be implemented/tested in next MRIP funding cycle. However, there may be a need to test the feasibility of some specific components of the new design in the FY15 project period.

1.3. Objectives

The objectives of the project are to: 1) design an appropriate onsite survey for catch rate from private boat fishing in Hawaii, 2) review the current HMRFS data, and 3) test the feasibility of some components of the new design.

1.4. References

1) Breidt, F.J., V. Lesser, and J.D. Opsomer. 2012. Consultant's Report: Preliminary Review of Hawaii Marine Recreational Fishing Survey. 2) Ma, H., D. Hamm, L. Johansen, T. Sminkey, and T. Ogawa. 2011. Hawaii pilot study to improve intercept survey (MRIP project report). 3) Ma, H., T. Ogawa, J. Breidt, V. Lesser, J. Opsomer, D. Van Voorhees, T. Sminkey, A. Bagwill, M. Quach, C. Hawkins, D. Itano, J. DeMello, W. Ikehara, 2014. Design effort surveys for shoreline fishing in HMRFS. FY13 MRIP Project Report. 4) MRIP Design and Analysis Workgroup. 2012. A pilot study of new sampling design for the access point angler intercept Survey (MRIP project report). 5) National Research Council (NRC). 2006. Review of recreational fisheries survey methods. The National Academies Press, Washington, D.C. 6) Ogawa, T and H. Ma. 2014. Pilot surveys of shoreline fishing effort for HMRFS. FY14 MRIP Project Plan. 7) Pacific Islands Regional Office (NOAA Fisheries). 2014. A survey of Hawaii's registered boaters: Results and implications for boat-based non-commercial fishery data and management. MRIP Project Report (draft).

2. Methodology

2.1. Methodology

The design for obtaining on-site catch rate estimates will be conducted by MRIP statisticians, MRIP statistical consultants, and team members in Hawaii. Hawaii members of the team will provide information/documents as needed. A face-to-face meeting will help brainstorm the design ideas and enhances the information exchange among the project team members and with the field surveyors. The results from a mail survey of Hawaii registered boaters can be discussed at the meeting to plan on the future effort survey for private boats.

Pilot testing the feasibility of some components of the proposed on-site survey can be carried out by field staff hired through a contractor or by HMRFS staff (assuming the testing does not interfere with the ongoing HMRFS surveys).

2.2. Regions

Western Pacific Islands

2.3. Geographic Coverage

The Main Hawaiian Islands

2.4. Temporal Coverage

2.5. Frequency

2.6. Unit of Analysis

2.7. Collection Mode

3. Communications Plan

3.1. Internal

Monthly (or as needed) conference calls and more frequent email communications will be made among project team members. Documents/data will be distributed/shared via email or posted to MRIP Collaboration Tool.

3.2. External

Monthly updates of the project will be reported to MRIP and a project report will be submitted.

4. Assumptions and Constraints

4.1. New Data

No

4.2. Track Costs

Yes

4.3. Funding Vehicle

PIFSC contracts and/or PIFSC cooperative agreements

4.4. Data Resources

HMRFS intercept data 2003-2014.

4.5. Other Resources

The consultant labor (and maybe travel) will be needed to help design the improved surveys.

Partners' travel will be needed to attend a meeting.

Field staff will be needed to test the feasibility of the new survey design(s).

4.6. Regulations

4.7. Other

5. Risk

5.1. Project Risk

Table 1: Project Risk

Risk Description	Risk Impact	Risk Probability	Risk Mitigation Approach
The meeting may not be held at the time planned due to schedule conflicts.	May delay the completion of the project.	Medium	May change the meeting time several weeks later or earlier. Will try to provide some access to the meeting for those who cannot make the travel.

6. Final Deliverables

6.1. Additional Reports

6.2. New Data Sets

6.3. New Systems

7. Project Leadership

7.1. Project Leader and Members

Table 2: Project Members

Project Role	Name	Organization	Title
Team Leader	Hongguang Ma	NOAA Fisheries / PIFSC	Statistician
Team Leader	Tom Ogawa	Hawaii Division of Aquatic Resources	HMRFS project manager
Team Member	Virginia Lesser	Oregon State University	MRIP Statistical Consultant
Team Member	Jean Opsomer	Colorado State University	MRIP Statistical Consultant
Team Member	John Foster	NMFS OST	Statistician
Team Member	Tom Sminkey	NMFS OST	Statistician
Team Member	Chris Hawkins	WPRFMC	Social Scientist
Team Member	Dave Van Voorhees	NMFS OST	Division Chief
Team Member	Jay Breidt	Colorado State University	MRIP Statistical Consultant

8. Project Estimates

8.1. Project Schedule

Table 3: Project Schedule - Major Tasks and Milestones

#	Schedule Description	Planned Start	Planned Finish	Prerequisites	Milestones
1	Prepare documents and conduct initial review/analysis	04/01/2015	06/30/2015		
2	Hold a face-to-face working meeting	07/06/2015	07/08/2015	1	
3	Draft a report with initial design ideas and recommend potential small scale feasibility tests	07/09/2015	08/31/2015	2	Y
4	Conduct potential feasibility tests (as needed)	10/01/2015	12/31/2015	3	
5	Draft the final project report	01/01/2016	02/29/2016	3,4	Y

8.2. Cost Estimates

Table 4: Cost Estimates

Project Need	Cost Description	Date Needed	Estimated Cost
Consultant labor and travel	For consultant's labor for reviewing the documents and participating the working meeting		\$20000.00
Working meeting logistics	For HMRFS staff's travel and for meeting place rental/service		\$15000.00

Data compiling/analysis and field testing	Short-term contract workers for data analysis/compiling and field feasibility testing		\$20000.00
TOTAL			\$55000.00